

VEKHTER P.[Waechter, P.], inzh. (Leyptsig, Germanskaya Demokrati-  
cheskaya Respublika)

New running equipment on excavators, mobile bridges, and other  
machines. Sbor. trud. MISI no.39:231-235 '61. (MIRA 16:4)

(Germany, East--Coal mining machinery)

L 33153-66 EWT(m)/EWP(j)/ENP(t)/ETI IJP(c) JD/RM  
ACC NR AB6016179 SOURCE CODE: UR/0058/65/000/011/D014/D014

AUTHOR: Bersuker, I. B.; Vekhter, V. G.

TITLE: Microwave "inversion" spectrum of complexes of transition metals

SOURCE: Ref. zh. Fizika, Abs. 11D101

REF SOURCE: Tr. Komis. po spektroskopii. AN SSSR, t. 3, vyp. 1, 1964, 520-528

TOPIC TAGS: complex molecule, transition element, microwave spectroscopy, molecular physics, METAL

ABSTRACT: The possible microwave spectrum of certain octahedral (type  $MA_6$ ) and tetrahedral (type  $MA_4$ ) complexes of transition metals, due to the transition between the inversion levels investigated earlier, is considered. For octahedral aqueous complexes of  $Ti^{3+}$ ,  $Cu^{2+}$ ,  $Fe^{2+}$ , and  $Mn^{3+}$  and tetrahedral  $VCl_4$ , the authors have calculated the number of lines of magnetic dipole transitions, their relative intensity, and their approximate position, which depends on the temperature in the presence of a crystalline environment. Estimates are made of the widths of the levels and it is shown that at low temperatures the latter are quite narrow. Conditions are indicated under which, as is assumed, observation of the effect is possible. [Translation of abstract]

SUB CODE: 20

LS

Card 1/1

VEKHTER, Ya.E.

Analysis of injuries in rolling mills of the Zlatoust Metallurgical Plant. Ortop., travm. i protez. 20 no.11:68-71 N '59.

(MIRA 13:4)

1. Iz Sverdlovskogo nauchno-issledovatel'skogo instituta travmatologii i ortopedii (direktor - kand.med.nauk Z.P. Iabagina) i med-sanchasti metallurgicheskogo zavoda (glavnyy vrach - A.V. Rogozhnikova).

(ACCIDENTS INDUSTRIAL statist.)

VEKHTER, Ya.E.

Characteristics of industrial injuries with and without loss of work capacity in the workers of Zlatoust Metallurgical Factory. Zdrav. Ros. Feder. 5 no.8:8-12 Ag '61. (MIRA 14:10)

1. Iz Sverdlovskogo nauchno-issledovatel'skogo instituta travmatologii i ortopedii (dir. - kand.med.nauk Z.P.Lubegina) i mediko-sanitarney chasti metallurgicheskogo zavoda (glavnyy vrach - zasluzhennyy vrach RSFSR A.V. Rogozhnikova).

(ZLATOUST—METALWORKERS—DISEASES AND HYGIENE)  
(INDUSTRIAL ACCIDENTS)

VEKILOV B. G.

15-57-2-1338

Translation from: Referativnyy zhurnal, Geologiya, 1957, Nr 2,  
pp 22-23 (USSR)

AUTHOR: Vekilov, B. G.

TITLE: New Species of the Genus Limnocardium From the Upper  
Pontian Deposits of the Syundinskiy Pass (O novykh  
vidakh roda Limnocardium iz verkhneponticheskikh  
otlozheniy Syundinskogo ushchel'ya)

PERIODICAL: Dokl. AN AzSSR, 1954, Vol 10, Nr 8, pp 547-556

ABSTRACT: The Pontian Pass in Azerbaydjan underwent considerable  
changes toward the end of its existence (Babadzhanskoye  
time). It grew shallow and broke up into a series of  
individual semi-isolated basins. New, mainly endemic  
forms originated as a result of the change in the  
existing conditions. Several new endemic cardia were  
discovered in sediments in one of these basins  
("Syudinskiy"). Among them were found representatives  
of the genus Limnocardium which, according to a number  
of characteristics in the structure of their shells,

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15-57-2-1338

New Species of the Genus Limnocardium (Cont.)

differ considerably from all the known earlier Black Sea and Caspian limnocardia, and which stand apart from the latter. The new species are: Limnocardium marasinicum, L. naburicum, L. Kobustanensis (follows kobustanense. Editor's note), L. schurvanicum.

Card 2/2

A. G. E.

15-57-4-4196

Translation from: Referativnyy zhurnal, Geologiya, 1957, Nr 4,  
p 24 (USSR)

AUTHOR: Vekilov, B. G.

TITLE: The Ecological Environment for the Existence and  
Development of the Fauna in the Pontic Basin of Eastern  
Azerbaidzhan (Bionomicheskkiye usloviya sushchestvovaniya  
i razvitiya fauny v Ponticheskom basseynе Vostochnogo  
Azerbaydzhana)

PERIODICAL: Tr. In-ta geol. AN AzerbSSR, 1956, Vol 18, pp 172-196

ABSTRACT: One may form an opinion of the salinity and of the  
acidity or alkalinity of an ancient basin by a quanti-  
tative and qualitative determination of the water-  
soluble salts and by the pH of aqueous extractions  
from the rocks. Subsequent phenomena (diagenesis, etc)  
produce rather insignificant changes in the primary  
value of pH and in the composition of the soluble salts.  
The author analyzed 200 samples of rock (clay, sand,  
sandstone, and limestone) from four sections in eastern

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15-57-4-4196

The Ecological Environment for the Existence (Cont.)

Azerbaidzhan. These analyses show that the accumulation of sediments in the lower horizons of the Pontic basin occurred in a neutral or weakly acid environment, in shallow water, and in a considerably freshened basin. During the accumulation of the middle horizons of the basin, the water became deeper, more salty, and more alkaline (pH up to 8.5). Paradacna and various forms of Valenciennesia (and others) lived in the deep-water parts of the basin. The forms unable to adapt themselves to the increased salinity and alkalinity (Parvi-venus and others) died out at the beginning of middle Pontian time. The littoral shallow-water border of the basin was inhabited by representatives of Charatoconcha, Phyllocardium, Didacna, Monodacna, Prosodacna, Limnocardium, Dreissensia, and others. Toward the end of the middle Pontian interval the basin was freshened and Valenciennesia died out. The remaining forms were apparently less sensitive to the fluctuations in salinity and pH (Cardiidae and Dreissensidae). These continued on into upper Pontian time and formed a number of endemic species (Monodacna babadjanica Andrus, Cardium negativum Andrus., Didacna depereti Andrus., and others). The Pontian fauna reached their greatest development in the basin at this time. At the Card 2/4



15-57-4-4196

The Ecological Environment for the Existence (Cont.)

beginning of the formation of the Produktivnaya tolshcha (Productive formation) the basin was broken up into separate lagoons. Some of these were made very saline; others, on the other hand, were freshened. The extinction of the Pontian fauna was the result either of the strongly increased salinity and pH (eastern part) or of the considerable freshening and decreased pH (western part).

A. I. O.

Editor's note: The method of determining salinity of ancient basins and, especially of measuring the acidity or alkalinity of the water (pH), is questionable. The aqueous environment of a basin and the environment of a given sediment are quite variable in physico-chemical relations; and during the diagenetic process the pH undergoes sharp and frequent changes, both increasing and decreasing. Strakhov, N. M., Brodskaya, N. G., and others, Obrazovaniye osadkov v sovremennykh vodoyemakh (Formation of sediments in present-day water reservoirs), Izd. AN SSSR, 1954, 556-587. The value of pH determined in an aqueous extraction from a rock indicates the concentration of hydrogen ions in the consolidated sediment and Card 3/4

15-57-4-4196

The Ecological Environment for the Existence (Cont.)

not in the water of the ancient basin. Therefore, the conclusions of the author concerning the influence of the pH of the water on the fauna of the Pontic basin in Azerbaïdzhan are not trustworthy.

Card 4/4

VAKILOV, B.G.

Quaternary deposits of the Caspian Sea regions of northeastern  
Azerbaijan [in Azerbaijani with summary in Russian]. Dokl. AN  
Azerb. SSR 13 no.2:147-155 '57. (MLRA 10:7)  
(Azerbaijan--Geology, Stratigraphy)

VEKILOV, B.G.; ASADULLAYEV, E.M.

New species of *Dudacna* Eichwald from the Lower Khazarian  
sediments of the Greater Kharami. Dokl. AN Azerb. SSR 20  
no.8:59-62 '64. (MIRA 17:12)

1. Institut geologii AN AzerSSR. Predstavleno akademikom  
AN AzerSSR K.A. Alizade.

VEKILOV, B.G.

Quaternary sediments in the Divichi oil-bearing area in Azerbaijan  
(Atachay-Kudialchay interfluvium). Trudy Inst. geol. AN Azerb. SSR  
19:5-36 '58. (MIRA 12:10)  
(Divichi region (Azerbaijan)--Geology, Stratigraphic)

VEKILOV, B.G.

Stratigraphic correlation of Pontian deposits in eastern Azerbaijan.  
Izv. AN Azerb. SSR no.12:45-70 D '56. (MLRA 10:4)  
(Azerbaijan--Geology, Stratigraphic)

VEKILOV, B.G.

Bionomic habitats and development of fauna in the Pontic Basin of  
eastern Azerbaijan. Trudy Inst. geol. AN Azerb. SSR 12:172-196 '56.  
(Azerbaijan--Paleontology, Stratigraphic) (MIRA 10:4)

VEKILOV, B.G.; ALIZADE, K.A., red.; VASILEVSKIY, Ya., red. izd-va;  
ISMAYLOV, T., tekhn. red.

[Pontian stage of eastern Azerbaijan] Ponticheskii iarus  
vostochnogo Azerbaidzhana. Baku, Izd-vo Akad. nauk Azer-  
baidzhanskoi SSR, 1962. 220 p. (MIRA 16:4)  
(Azerbaijan--Geology, Stratigraphic)



V201204, P. 1  
ALIZADE, K.A.; VEKILOV, B.G.; GEYVANDOVA, Ye.Kh.; KHALILOV, A.G., re-  
daktor; PEVZNER, M.I.; tekhnicheskiiy redaktor.

[Principal fossils of the Pleistocene and Quaternary Periods in  
Azerbaijan] Rukovodiashchie okamenelosti plitsenovykh i  
chetvertichnykh otlozhenii Azerbaidzhana; spravochnik. Baku,  
Izd-vo Akad.nauk Azerbaidzhanskoi SSR, 1957. 141 p. (MLRA 10:6)  
(Azerbaijan--Paleontology, Stratigraphic)

VEKILOV, B.G.,

New species of the genus *Limnocardium* from the upper Pontian deposits found in Syundin Canyon. Dokl. AN Azerb. SSR 10 (MLRA 8:10) no.8:547-556 '54.

1. Institut geologii im. akademika I.M.Gubkina Akademii nauk Azerbaydzhanskoy SSR. Predstavleno deystvitel'nym chlenom Akademii nauk Azerbaydzhanskoy SSR M.M.Aliyevym.  
(Azerbaijan--Paleontology)

VEKILOV, Grozdan

On some signs of dogmatism in biology and medicine. Suvr. med.  
14 no.9:3-15 '63.

(PHILOSOPHY, MEDICAL) (BIOLOGY)  
(GOVERNMENT)

VEKILOV, G. (Bolgariya)

Philosophy and genetics. Vest. AMN SSSR 21 no.1:79-87 '66.  
(MIRA 19:1)

VEKILOV, Gr.

Pavlovian and modern neurophysiology. Suvr. med. (Sofia) 16  
no.2:71-81 '65.

1. VMI, Sofia, Katedra po marksizum-leninizum (rukovoditel:  
prof. Iv. Panchev).

VEKILOV, Sh.I.

First boundary value problem for the Laplace equation in a composite region with angular lines. Izv. AN Azerb. SSR. Ser. fiz.-tekhn. i mat. nauk no.1:7-12 '63. (MIRA 17:9)

BR

ACCESSION NR: AP4027705

S/0233/63/000/006/0011/0016

AUTHOR: Vekilov, Sh. I.

TITLE: Application of the potential theory to the solution of Dirichlet problems for an elliptic equation with corner lines

SOURCE: AN AzerbSSR. Izvestiya. Seriya fiz.-matem. i tekhn. nauk, no. 6, 1963, 11-16

TOPIC TAGS: potential theory, elliptic equation, Dirichlet problem, boundary value problem, calculus of variation, partial differential equation, differential equation

ABSTRACT: The second order elliptic differential equation

$$D(u) = \sum_{i,j}^{1,2} a_{ij} \frac{\partial^2 u}{\partial x_i \partial x_j} + \sum_{i=1}^{1,2} b_i \frac{\partial u}{\partial x_i} + cu = d, \quad (a_{ij} = a_{ji}) \quad (1)$$

is examined. Let  $LCT$  be a closed line of continuous curvature, outside of which  $\tau$  is smooth in the Lyapunov sense, and

$$\theta = \sup_{s \in L} |\pi - \alpha(s)|;$$

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ACCESSION NR: AP4027705

where  $\alpha(S)$   $\angle S$  is the arc length  $\angle$  are angles formed by the tangents at any point on the corner line  $L$  from the right and left. It is necessary to find a solution to equation (1) which satisfies the boundary condition

$$u(x) = f(x) \quad x \in L, \quad (2)$$

The solution to the homogeneous self-adjoint equation

$$L(u) = \sum_{i,j} \frac{\partial}{\partial x_i} \left( a_{ij} \frac{\partial u}{\partial x_j} \right) = 0 \quad (3)$$

is found. The solution is sought in the form of the potential of a compound layer

$$W(x) = \frac{1}{2\pi} \int_{\Gamma} [K(x, \xi)] \mu(\xi) d\Gamma_{\xi} \quad (4)$$

When the point  $(x)$  approaches point  $(x_0)$  lying on  $\Gamma-L$  from within the surface  $\Gamma$ , the potential (4) has limiting values.

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ACCESSION NR: AP4027705

$$W_1(x_0) = \mu(x_0) + \frac{1}{2\pi} \int_1^0 \mu(\xi) \partial_1 [K(x_0, \xi)] d\Gamma_1.$$

Therefore, the boundary value problem (2) and (3) is reduced to a singular equation for the unknown  $\mu(x)$ . Orig. art. has: 2 figures and 18 equations.

ASSOCIATION: AN Azerb SSR

SUBMITTED: 00

ENCL: 00

SUB CODE: MA

NR REF SOV: 002

OTHER: 002

Card 3/3

L 32052-66 EWT(1)/EWT(m)/T/ENP(t)/ETI IJP(c) JD/JG/AT

ACC NR: AP6013342 SOURCE CODE: UR/0363/66/002/004/0636/0642

AUTHOR: Vekilov, Yu. Kh.; Mil'vidskiy, M. G.; Osvenskiy, V. B.; Stolyarov, O. G.; Kholodnyy, L. P. 51  
B

ORG: Giredmet 2

TITLE: Effect of doping and illumination on the microhardness of semiconductor single crystals

SOURCE: AN SSR. Izvestiya. Neorganicheskiye materialy, v. 2, no. 4, 1966, 636-642

TOPIC TAGS: gallium arsenide, hardness, semiconductor single crystal 21 11 18

ABSTRACT: The microhardness of n- and p-type GaAs single crystals was studied as a function of the carrier concentration, illumination with white light, crystallographic orientation, and magnitude of the load on the indenter. It was shown that doping of GaAs with a donor or acceptor impurity causes a decrease in microhardness, as in the case of Si and Ge. It was established that both the concentration effect and the illumination effect in the semiconductor single crystals studied are surface effects and are observed to a depth of a few microns. The results are explained by the peculiar properties of the surface of semiconductors and are attributed to the presence in the transition layer of Card 1/2 UDC: 537.311.3

L 32052-66

ACC NR: AP6013342

an electric field perpendicular to the surface. It was established that the length of the prongs of dislocation "rosettes" formed around the imprints increases when donor and acceptor admixtures are used in doping, this being in accord with the concentration effect of decrease in microhardness. Although the explanation of the observed effects is not always unambiguous (because of the complexity of the phenomena), the method of microhardness measurement may be used to study the surface properties of semiconductors. Orig. art. has: 6 figures and 1 table.

SUB CODE: 11, 20 / SUBM DATE: 27Jul65 / ORIG REF: 010 / OTH REF: 003

Card 2/2

VEKILOVA, F.I.; EFENDIYEV, Ya.G.; BABAYEVA, V.A.; GADZHIYEVA, E.K.

Cobalt and nickel content in pyroxenites. Dokl. AN Azerb.  
SSR 20 no.7:29-33 '64. (MIRA 17:11)

1. Institut geologii AN AzerSSR. Predstavleno akademikom AN  
AzerSSR M.A. Kashkayem.

VEKILOVA, F.I.; GADZHIYEVA, E.K.; BABAYEVA, V.A.; ALIYEVA, R.

Cobalt and nickel in listvenites. Dokl. AN Azerb. SSR 20  
no.12:21-25 '64. (MIRA 18:4)

1. Institut geologii AN AzerbSSR.

VEKILOVA, F.I.; EFENDIYEV, Ya.G.

Cobalt and nickel occurrences in effusive rocks. Izv. AN Azerb.  
SSR Ser. geol.-geog. nauk i iefiti no.5:87-103 '62.  
(MIRA 16:6)

(Cobalt) (Nickel)

VEKILOVA, E.I.; BOROVSKAYA, Yu.B.; EFENDIYEVA, N.G.

Distribution of cobalt in plants. Izv. AN Azerb. SSR. Ser. geol.-geog.  
nauk i nefti no.4:71-86 '63. (MIRA 17:4)

ALIKHANCY, E.N.; ARUSHANOV, N.A.; AKHUNDOV, V.Yu.; ALIZADE, M.A.; AZIZBEKOV, Sh.A.; BAGIROV, M.A.; VEZIROV, S.A.; VOLOBUYEV, V.R.; VEKILOV, F.M.; GADZHIYEV, N.M.; GUSEYNOV, D.M.; GUSEYNOV, I.A.; DADASHEV, K.K.; DADASHZADE, M.A.; DALIN, M.A.; ISKENDEROV, M.A.; KAZIYEV, M.A.; KARAYEV, A.I.; KASHKAY, M.S.; KEL'DYSH, M.V.; KERIMOV, A.G.; LEMBERANSKIY, A.D.; MAMEDOV, G.K.; MEKHTIYEV, M.R.; MIRZOYEV, S.A.; NAGIYEV, M.F.; NASRULLAYEV, N.I.; OGUDZHEV, A.K.; RADZHABOV, R.A.; RUDNEV, K.N.; SADYKHOV, R.N.; SEMENOV, N.N.; TOPCHIEV, A.V.; TOPCHIBASHEV, M.A.; TAIROVA, T.A.; KHALILOV, Z.I.; EFENDIYEV, G.Kh.; SHUKYUROVA, Z.Z.

IUsif Geidarovich Mamedaliev. Azerb.khim.zhur. no.6:5-6 '61.  
(MIRA 15:5)

(Mamedaliev, IUsif Geidarovich, 1905-1961)



VEKILOV, E.N.; POGOSOV, A.G.; TER-GAZAROV, A.Ye., prof., red.;  
TOROSYAN, R., tekhn. red.

[Organizational problems in the control of tuberculosis] Orga-  
nizatsionnye voprosy bor'by s tuberkulezom. Pod red. A.E.Ter-  
Gazarova. Baku, Azerbaidzhanskoe gos. izd-vo, 1962. 294 p.  
(MIRA 15:6)

(TUBERCULOSIS—PREVENTION)

VEKILOV, Gr.

The dialectics of the process of apprehension and the theory  
of higher nervous activity. Nauch. tr. vissh. med. inst. Sofia  
41 no.6:17-37 '62.

1. Predstavena ot dots. Grozdan Vekilov.  
(LEARNING) (CENTRAL NERVOUS SYSTEM)

VEKILOV, G.S.

Thorough overhaul is needed in the planning of drilling operations.  
Azerb.neft.khoz. 40 no.8:48 Ag '61. (MIRA 15:2)  
(Oil well drilling)

VEKILOV, Sh.I.

Application of the theory of potential to the solution of Dirichlet problems for elliptic equations in a region with angular lines. Izv. AN Azerb. SSR. Ser. fiz.-mat. i tekhn. nauk no.6:11-16 '63. (MIRA 17:3)

VEKILOV, Sh.I.

Green's function for a Laplacian operator in a composite region.  
Trudy Inst. mat. i mekh. AN Azerb. SSR 2:24-31 '63.

Solution of Zarembo's problem in a composite region. 32-38  
(MIRA 16:10)

*U. E. 95*

*16 I-FW*

Vekilov, S. I. Mixed boundary problems for a set of piecewise-smooth harmonic functions. Akad. Nauk Azerbaidzhan SSR Frunz Inst Fiz. Mat. 4:5 (1952) 149-167 (Russian; Azerbaidzhanian summary).

Let  $D_1$  and  $D_2$  be (multiply-connected) regions, with  $D_1$  bounded by smooth surfaces  $S, S_1, S_2, \dots, S_n$  and  $D_2$  bounded by  $S, S_{n+1}, S_{n+2}, \dots, S_{n+m+1}$ . Suppose that  $S$  surrounds  $S_1, S_2, \dots, S_n$ , and that  $S_{n+m+1}$  surrounds  $S, S_1, S_2, \dots, S_{n+m}$ . Define a set of  $n$  (unknown) functions  $U_1, U_2, \dots, U_n$  by requiring that they be harmonic in  $D_1$  and  $D_2$  and satisfy the following conditions.

$$(dU_k/dn) = \sum_{j=1}^n a_{kj}^{(p)} U_j + f_k \quad \text{on } S_p.$$

$$K_1(dU_k/dn)_i|_S = K_2(dU_k/dn)_e|_S.$$

*1/2*

1.  $U_k, S, I.$

Here  $K_1, K_2$  are constants,  $g_k^{(n)}$  and  $f_k^{(n)}$  are continuous functions, the  $g_k^{(n)}$  satisfy certain inequalities, and it is required that the  $U_k$  be continuous across  $S$ . Then the  $U_k$  exist and are uniquely determined. The proof is obtained by representing the  $U_k$  as the potential due to single layers distributed over the surfaces  $S$  and  $S_v$ , and hence obtaining Fredholm integral equations for the densities of these layers. If the boundary condition on  $S_{n+m+1}$  is replaced by one on the  $U_k$  not involving derivatives, then, in this case also, the  $U_k$  exist and are uniquely determined. In this case, as one would expect, Fredholm equations are obtained by replacing the single layer on  $S_{n+m+1}$  by a double layer

R. B. Davis

2/2

V E K I L o v, S h. I.  
16(0); 28(2) p. 2

PHASE I BOOK EXPLOITATION

SOV/3365

Akademiya nauk Azerbaydzhanskoy SSR

Tezisy dokladov Soveshchaniya po vychislitel'noy matematike i primeneniyu sredstv vychislitel'noy tekhniki (Outlines of Reports of the Conference On Computational Mathematics and the Use of Computer Techniques) Baku, 1958.  
63 p. 400 copies printed.

Additional Sponsoring Agencies: Akademiya nauk SSSR. Vychislitel'nyy tsentr, and Akademiya nauk SSSR. Institut avtomatiki i telemekhaniki.

No contributors mentioned.

PURPOSE: This book is intended for pure and applied mathematicians, scientists, engineers and scientific workers, whose work involves computation and the use of digital and analog electronic computers.

COVERAGE: This book contains summaries of reports made at the Conference on Computational Mathematics and the Application of Computer Techniques.  
The book is divided into two main parts. The first part is devoted to

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Outlines of Reports of the Conference (Cont.)

computational mathematics and contains 19 summaries of reports. The second section is devoted to computing techniques and contains 20 summaries of reports. No personalities are mentioned. No references are given.

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On a plane problem, since

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bounded by  $L_t$  ( $t=1, 2, \dots, m+n$ ). The unknown harmonic function  $\phi$  is defined by  $\Delta\phi=0$  in  $g_1$  and  $g_2$ ,  $\phi=f(t)$  on  $L_0+L_1+\dots+L_{m+n}$ ,  $k_1 \partial\phi/\partial n|_{L_0} = k_2 \partial\phi/\partial n|_{L_0}$ ,  $k_1 \partial\phi/\partial n|_{L_1} = k_2 \partial\phi/\partial n|_{L_1}$ ,  $\dots$ ,  $k_1 \partial\phi/\partial n|_{L_{m+n}} = k_2 \partial\phi/\partial n|_{L_{m+n}}$ . This problem is unique. (This problem arises in the analysis of heat conduction through porous media.) The proof depends upon solving a modified problem, the solution of which is that the problem is terminated along with the unknown  $\phi$  except that  $\phi_0$  is required to be 0. For a problem, the condition is that

1/2

... is representable as the potential,  $\Phi = \Phi(r)$

...  $\Phi(r)$  is representable as the potential,  $\Phi = \Phi(r)$   
 Izv. Prikl. Mat. Mekh. 1954, No. 4, 151; 1, 314), and the usual Fredholm orthogonality conditions serve to determine the  $\alpha_k$  uniquely so that the solution of the modified problem exists and is unique.

The original problem is solved as follows. Uniqueness is a consequence of the following potential-theoretic line of argument. To prove we shall represent  $\Phi$  in the form

$$\Phi(P) = \pi^{-1} \int_L \mu(q) \ln(r_q^{-1}) d\sigma_q + \sum_{j=1}^{n-1} B_j \ln(r_j^{-1}(P, P_j)),$$

where  $P_j$  is a fixed point interior to  $g\Omega$  (and therefore  $P_j \in \Omega_1 + \Omega_2$ ). This can be reduced to a problem of the modified type; the constants  $B_j$  depend linearly on the constants  $\alpha_k$ . For the modified problem the potential  $\Phi$  is uniquely determined, and the constants  $B_j$  are uniquely determined.

$B_j$  and consequently a unique function  $\Phi$ .  
 R. J. Davis (Syracuse, N.Y.).



VERILOV, S. I.

... and non-linear mixed boundary ... F.W

"APPROVED FOR RELEASE: 09/01/2001

CIA-RDP86-00513R001859230009-4

YAKIMOV S. A.

APPROVED FOR RELEASE: 09/01/2001

CIA-RDP86-00513R001859230009-4"

VEKILOV, Sh. I.

PHASE I BOOK EXPLOITATION

SOV/5962

Vsesoyuznoye soveshchaniye po vychislitel'noy matematike i primeneniyu sredstv vychislitel'noy tekhniki, Baku, 1958.

Trudy (Transactions of the All-Union Conference on Computer Mathematics and Applications of Computers) Baku, Izd-vo AN Azerbaydzhanskoy SSR, 1961. 254 p. 500 copies printed.

Sponsoring Agency: Akademiya nauk Azerbaydzhanskoy SSR. Vychislitel'nyy tsentr.

Eds.: A.A. Dorodnitsyn, S.A. Aleskerov, and K.F. Shirinov; Ed. of Publishing House: A. Til'man; Tech. Ed.: T. Ismailov.

PURPOSE: The book is intended for mathematicians and other specialists interested in computer theory and uses for computers.

COVERAGE: The book contains the texts of 24 papers presented at the All-Union Conference on Computer Mathematics and Applications of Computers held in Baku, 3-8 Feb 1958. The "Resolution"

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Transactions of the All-Union (Cont.)

SOV/5962

of the conference, consisting of proposals for accelerating the development of computer mathematics and computer engineering, is also included.

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VEKILOV, Sh.I.

Solution of one boundary value problem by Schwarz's alternative  
method. Trudy Inst. mat. i mekh. AN Azerb.SSR 1:27-43 '61.  
(MIRA 14:11)

(Boundary value problems)  
(Potential, Theory of)

VEKILOV, Sh.I.

Solution of one mixed problem by the method of integral  
equations. Trudy Inst. mat. i mekh. AN Azerb.SSR 1:44-66 '61.  
(MIRA 14:11)

(Boundary value problems)  
(Potential, Theory of)

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S/233/62/000/002/002/002  
1027/1250

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AUTHOR: Vekilov, Sh. I.

TITLE: Solution of the Dirichlet problem for Laplace equation in a composite domain with corner points

PERIODICAL: Akademiya nauk Azerbaydzhanskoy SSR. Izvestiya. Seriya fiziko-matematicheskikh i tekhnicheskikh nauk, no. 2, 1962, 27-37

TEXT: The author solves the following Dirichlet problem for a composite planar domain:  $g$  is a bounded simply-connected domain whose boundary  $\Gamma$  consists of a finite arc with continuous curvature intersecting at a number of points  $P_1, P_2, \dots, P_n$ .  $\gamma$  is a closed curve inside  $g$  which divides  $g$  into  $q_1$  (surrounded by  $\gamma$ ) and  $q_2$ . We seek a function  $U(x, y)$ , continuous in  $q + \Gamma$ , harmonic in  $q_1$  and  $q_2$  and satisfying the condition

$$U|_{\Gamma} = f(p) \quad (1)$$

and

$$K_1 \left( \frac{dU}{dn_p} \right)_{\gamma^-} - K_2 \left( \frac{dU}{dn_p} \right)_{\gamma^+} + h(p)U = \varphi(p), \quad (2)$$

where  $\eta_p$  is the interior normal through the point  $p$  on  $\gamma$ ;  $\gamma^-$ ,  $\gamma^+$  denote an approach to  $\gamma$  from inside or outside  $g$ ;  $K_1, K_2 > 0$  are constants;  $f(p), h(p), \varphi(p)$  are given continuous functions on  $\Gamma$  and  $\gamma$ ,  $h(p) \geq 0$ .

Card 1/2

Solution of the Dirichlet

S/233/62/000/002/002/002  
1027/1250

After proving that there is a unique solution of the problem, the author seeks it from a sum of a single layer potential on  $\Gamma$  and a double layer potential on  $\gamma$ :

$$U(\rho) = \frac{1}{\pi} \int_{\Gamma} \mu(t) \frac{\cos \varphi}{r} dt + \frac{1}{\pi} \int_{\gamma} \delta(t) \ln \frac{1}{r} dt \quad (3)$$

where  $\vec{r}$  is the vector from  $t$  to  $P$  ( $r = |\vec{r}|$ ), and  $\varphi$  is the angle between  $\vec{t}$  and  $\vec{r}$ .

A system of two integral equations for  $\mu$  and  $\delta$  is readily obtained. However the kernel on  $\Gamma$  (for  $\mu$ ) has strong singularity of a corner point. Using results of Carleman, an equivalent system is obtained, for which the Fredholm theory applies. The results can be extended to the case of several closed curves lying inside  $g$ , each of them satisfying a condition of the form (2). There are 2 figures, 4 references, including:

Radion I: O kraevykh zadachakh dla logaritmicheskogo potentsiyala (Boundary problem for logarithmic potential), VMN, vol. 1, no. 3-4 (13-14), 1946

Carleman T: Über des Neumaun-Poincaresche Problem für ein Gebiet mit Ecken, Uppsala, 1916.

Card 2/2



VEKILOV, Sh. I.

Solution to Dirichlet's problem for a Laplace equation in a  
composite region with corners. Izv. AN Azerb. SSR. Ser. fiz.-  
mat. i tekhn. nauk no.2:27-37 '62. (MIRA 15:10)

(Potential, Theory of) (Harmonic functions)

VEKILOV, S.V.

ALIYEV, M.M., akademik; red.: VEKILOV, Samed Vurgun, red. [deceased];  
MEKHTIYEV, Sh.F., red.; ALAMPIYEV, P.M., doktor ekon.nauk, red.;  
SHIKHLINSKIY, E.M., kand.geograficheskikh nauk, red.; BOGDATLISHVILI,  
D.D., red.izd-va; POGOSOV, V.A., tekhn.red.

[Soviet Azerbaijan] Sovetskii Azerbaidzhan. Pod red. M.M.Alieva i dr.  
Baku, 1958. 759 p. (MIRA 11:7)

1. Akademiya nauk Azerbaydzhanskoy SSR, Baku. Institut geografii.
2. Akademiya nauk Azerbaydzhanskoy SSR (for Aliyev).
3. Chlen-korrespondent AN Azerbaydzhanskoy SSR (for Mekhtiyev)  
(Azerbaijan)

VEKILOV, Sh.I.

One three dimensional boundary value problem of the theory of  
potential. Izv. AN Azerb. SSR. Ser.fiz.-mat. i tekhn. nauk no.4:19-33  
'60. (MIRA 14:3)  
(Boundary value problem) (Potential, Theory of)

VEKILOV, Yu.; TYAPUNINA, N.A.; SHASKOL'SKAYA, M.P.

Internal friction and dislocation density in LiF following a preliminary plastic deformation.. Kristallografiya no. 6:953-955 N-D '60. (MIRA 13:12)

1. Moskovskiy institut stali i Moskovskiy gosudarstvennyy universitet imeni M.V. Lomonosova.  
(Lithium fluoride crystals)

VEKILOV, Yu. Kh.

Phenomenon of "nonphotoelasticity" in AgCl. Fiz. tver. tela 3  
no.2:545-546 F '61. (MIRA 14:6)

1. Moskovskiy institut stali, kafedra fiziki.  
(Silver chloride crystals)

L 20811-65 EWT(m)/T/EWP(t)/EWP(b) IJP(c)/AFWL/SSD/ASD(m)-3/ESD(gs) JD  
S/0137/64/000/009/I027/I028

ACCESSION NR: AR4048238

SOURCE: Ref. zh. Metallurgiya, Abs. 91176

AUTHOR: Vekilov, Yu. Kh.; Piguzov, Yu. V. B

TITLE: The effect of lattice defects on the internal friction of silver chloride 18

CITED SOURCE: Relaksats. yavleniya v met. i splavakh. M., Metallurgizdat, 1963, 92-96

TOPIC TAGS: lattice defect, internal friction, silver chloride, irradiation effect, shear modulus

TRANSLATION: The effect of irradiation on the internal friction of samples of silver chloride was investigated. Internal friction and shear modulus G of deformed samples was measured in the irradiated and nonirradiated state in a temperature interval from -190 to +20°. The irradiation was performed with an ultraviolet radiation source at -190°; the irradiation period varied from 10 to 50 min. Internal friction was measured on a relaxation oscillator with a reverse

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ACCESSION NR: AR4048238

pendulum. The degree of preliminary deformation of the samples, performed by extrusion of the monocrystalline substance and subsequent drawing, was approximately 90%. Irradiation does not change the magnitude of internal friction at  $-190^{\circ}$  and brings about the emergence of peaks on the curve for the temperature dependence of internal friction associated with relaxation of G. The peaks in internal friction at  $-125^{\circ}$ ,  $-65^{\circ}$ , and  $-25^{\circ}$  are extremely unstable and disappear immediately on heating to room temperature, with the exception of the internal friction peak at  $-65^{\circ}$  which disappears after a second heating to room temperature. Contrary to the case of irradiation at room temperature, irradiation at  $-190^{\circ}$  does not lead immediately to a decrease in internal friction; heating to room temperature is necessary for this effect. The change observed in the temperature dependence of internal friction is connected with the emergence of local defects and their interaction with dislocations at high temperature.

SUB CODE: MM

ENCL: 00

Card 2/2

S/181/61/003/012/012/028  
B104/B102

AUTHORS: Tyapunina, N. A., Shaskol'skaya, M. P., Chao-chien, and  
Vekilov, Yu. Kh.

TITLE: Effect of plastic deformation and irradiation on the internal friction of LiF single crystals

PERIODICAL: Fizika tverdogo tela, v. 3, no. 12, 1961, 3637 - 3644

TEXT: Internal friction, dislocation density, and birefringence of LiF single crystals have been studied. The dislocation density was varied by deformation of the crystals under different stresses, and the defect concentration was varied by X-ray treatment. The internal friction was determined from the attenuation of 100-kc longitudinal waves. The measurements were made at a relative deformation amplitude of  $3 \cdot 10^{-7}$ , at a residual atmospheric pressure of  $10^{-2}$  mm Hg, and at room temperature. The dislocation density was calculated from the number of etch patterns on the {100} faces. The etching agent was a 3%  $\text{FeCl}_3$  solution. The

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S/181/61/003/012/012/028  
B104/B102

Effect of plastic deformation ...

internal friction of all the preliminarily deformed specimens diminished when resting at room temperature. A stable decrement of attenuation was reached after 1 to 2 hrs. Since the dislocation density remains constant during this time, it is assumed that this recovery phenomenon is related to a fixing of the point dislocations formed during deformation. The birefringence due to the loading of the single crystals vanishes after removal of the load if the deformations were elastic. When deformations are plastic a residual birefringence is observed after load removal. From this limit internal friction and dislocation density increase rapidly. Further increase of stress doubles the decrement of attenuation and increases the dislocation density by two orders of magnitude. The stress at which residual birefringence occurs in conjunction with an increase in internal friction and dislocation density depends on the heat treatment of the specimen. For a specially annealed specimen, the stress amounts to  $(3.8 - 4.0) \cdot 10^2 \text{ g/mm}^2$ , and for a specimen annealed as usual it amounts to  $(5.7 - 7.0) \cdot 10^2 \text{ g/mm}^2$ . In order to eliminate the effect of dislocations on the foregoing results from that of point defects, the experi-

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B104/B102

Effect of plastic deformation ...

ments were repeated with specimens X-rayed for different times (Figs. 3 and 4). The irradiation improved the strength of the specimens. Non-irradiated specimens were destroyed at a stress of  $(7 - 8) \cdot 10^2 \text{ g/mm}^2$  while irradiated specimens were destroyed only at  $1 \cdot 10^3 \text{ g/mm}^2$ . The results are interpreted using the dislocation theory of internal friction. In the 100 kc range the amplitude-independent portion of internal friction in plastic deformation of LiF single crystals depends chiefly on the scattering of mechanical energy by dislocations. Ye. G. Shvidkovskiy is thanked for interest and advice. There are 5 figures, 3 tables, and 8 references: 4 Soviet and 4 non-Soviet. The four references to English-language publications read as follows: A. Granato, K. Lücke. J. Appl. Phys., 27, 513, 1956; J. S. Koehler. Imperfections in nearly perfect crystals, N. Y., 1952; A. Granato, K. Lücke; Proc. of the Lake Placid Conference, N. Y., 1958; R. G. Brackenridge. Imperfections in nearly perfect crystals, N. Y., 1952, J. Chem. Phys., 18, 913, 1952.

ASSOCIATION: Moskovskiy institut stali (Moscow Steel Institute)

Card 3/8 3

VEKILOV, Yu.Kh.

Effect of plastic deformation on internal friction and shear  
modulus in silver chloride. Izv.vys.ucheb.zav.; Chern.Met.  
no.5:76-80 '60. (MIRA 13:6)

1. Moskovskiy institut stali.  
(Dislocations in metals) (Silver chloride)

SHASKOL'SKAYA, M.P.; VEKILOV, Yu.Kh.

Effect of ultraviolet and X-ray radiation on the internal friction  
in silver chloride. Fiz.tver.tela 2 no.6:1107-1110 Je '60.  
(MIRA 13:8)

1. Kafedra fiziki Moskovskogo instituta stali.  
(Ultraviolet rays)  
(Silver chloride)  
(X rays)

VEKILOV, Yu. Kh.

SHASKOL'SKAYA, M.P.; VEKILOV, Yu. Kh.

Etching figures on slip lines and on polygonization boundaries in silver chloride crystals. Kristallografiia 2 no. 4: 548-551 '57. (MLRA 10:8)

1. Moskovskiy institut stali im. I.V. Stalina.  
(Silver chloride) (Dislocations in crystals)

SOV/20-128-1-17/58

16(1)

AUTHORS: Vekilov, Yu. Kh., Shaskol'skaya, M. P.

TITLE: Influence of Plastic Deformation on Internal Friction and the Shear Modulus in Silver Chloride

PERIODICAL: Doklady Akademii nauk SSSR, 1959, Vol 128, Nr 1, pp 71 - 72 (USSR)

ABSTRACT: This article presents preliminary results of an investigation of internal friction in AgCl crystals. The authors investigated the temperature dependence of internal friction and the shear modulus by means of a relaxator of the type RKF-MIS. The samples were 20 mm long and had a radius of 0.75 mm. They were prepared in the following manner: The AgCl single crystals were pressed on a 50-ton press through a hole 2 mm wide at room temperature, and the resultant wire was drawn out without intermediary tempering until a diameter of 0.75 mm was attained. Relaxation has probably not taken place between the individual operations. Internal friction was ascertained from the amount of the decrement of damping :

Card 1/3  $Q^{-1} = \Delta/\pi = (1/\pi n) \ln(A_1/A_n)$ , where n denotes the number of

Influence of Plastic Deformation on Internal Friction  
and the Shear Modulus in Silver Chloride

SOV/20-128-1-17/58

oscillations between the amplitudes  $A_1$  and  $A_n$ . The temperature dependence of the shear modulus  $G \sim f^2$  was simultaneously recorded, where  $f$  denotes the frequency of oscillations. A line of a diagram illustrates the temperature dependence of internal friction of deformed samples. At  $20^\circ$  it holds:  $Q^{-1} = 10^{-2}$ . The branch of internal friction corresponding to high temperatures begins to run at room temperature, and already at  $75^\circ$  it holds:  $Q^{-1} = 10^{-1}$ . After the measurements the deformed samples were annealed directly in the device for five hours at  $240^\circ$  and then cooled in a furnace. They recrystallized completely and obtained fine-grained structure. The other two lines of the above diagram show the temperature dependence of  $Q^{-1}$  and of the shear modulus  $G$  of annealed polycrystalline AgCl samples. At  $20^\circ$ ,  $Q^{-1}$  is smaller by two orders than in the case of deformed samples, and attained a value of  $(5-8) \cdot 10^{-4}$  in the individual samples. Internal friction begins to rise at  $200^\circ$ . It attains a peak at  $200^\circ$ , which results in a corresponding variation of the modulus. This peak is obviously connected with the relaxation of tensions at the grain boundaries. The temperature de-

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Influence of Plastic Deformation on Internal Friction  
and the Shear Modulus in Silver Chloride

SOV/20-128-1-17/58

pendence of the shear modulus differs in deformed and annealed state. The modulus in deformed state depends on temperature more strongly than in annealed state. At 20°, the moduli differ by 13-17%, thus considerably exceeding the error of measurement. The sign of the modulus variation is anomalous because the modulus usually becomes smaller during deformation. The authors thank Yu. V. Piguzov for valuable advice in measurements. There are 1 figure and 7 references, 5 of which are Soviet.

ASSOCIATION: Moskovskiy institut stali im. I. V. Stalina (Moscow Steel Institute imeni I. V. Stalin)

PRESENTED: April 22, 1959, by G. V. Kurdyumov, Academician

SUBMITTED: April 18, 1959

Card 3/3



BEYLIN, V.M.; VEKILOV, Yu.Kh.; KADYSHEVICH, A.Ye.; FIGUZOV, Yu.V.; RATTKE, R.

Influence of the intrinsic photoeffect on the damping of elastic waves in Ge. Fiz. tver. tela 5 no.8:2371 Ag '63. (MIRA 16:9)

1. Moskovskiy institut stali i splavov.  
(Elastic waves) (Photoelectricity)

BEYLIN, V.M.; VEKILOV, Yu.Kh.

Influence of the intrinsic photoeffect on the microhardness of Ge  
and Si. Fiz. tver. tela 5 no.8:2372-2374 Ag '63. (MIRA 16:9)

1. Moskovskiy institut stali i splavov.  
(Photoelectricity) (Hardness)

VEKILOV, YU. KH.

70-4-15/16

AUTHORS: Shaskol'skaya, M.P. and Vekilov, Yu. Kh.

TITLE: Etch Figures on Slip Lines and on the Faces of Polygonalized Blocks in Crystals of Silver Chloride. (Figury travleniya na liniyakh skol'zheniya i na granitsakh poligonal'nykh blokov v kristallakh khloristogo serebra).

PERIODICAL: Kristallografiya, 1957, Vol.2, Nr.4, pp.548-551 + 8 plates (USSR).

ABSTRACT: Polycrystalline sheets of silver chloride, which were only one crystal thick, were prepared by methods described by the authors and by Zhitnikov (Zh.Tekh.Fiz., Vol.26, 772, 1956). Single crystals, made by passing a melt through a furnace, were pressed and then rolled into a sheet 0.3 mm in thickness corresponding to a deformation of 98%. 6 to 8 hours annealing at 150-200 C served to relieve strains. The sheets were etched by thiosulphate solution to clean the surfaces and flattened by squeezing between two plastic plates. A second annealing at  $400 \pm 10$  C was given for 6 hours. The area of each grain had then become about  $1 \text{ cm}^2$ . The sheet could then be stretched at 0.07 mm/min on the stage of a microscope. When lightly etched etch pits in rectangular networks become apparent. These often coincide with the

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70-4-15/16

Etch Figures on Slip Lines and on the Faces of Polygonalized Blocks  
in Crystals of Silver Chloride.

pattern on the reverse of the specimen. The appearance of such figures depends on the time of annealing; if this is extended beyond 6 to 8 hours no network is found. If one of these etched crystals is slowly extended then slip lines appear. They are nearly perpendicular to the series of etch lines demonstrating a direct connection between the two systems. On crystals deformed after annealing etch pits appear only along the wavy slip lines. A gradual displacement of the grain boundaries can be brought out by etching. There are 8 plates and 1 figure, also 10 references, of which 2 are Slavic.

ASSOCIATION: Stalin Institute of Steel, Moscow.  
(Moskovskiy Institut Stali im. I.V. Stalina).

SUBMITTED: March 5, 1957.

AVAILABLE: Library of Congress.

Card 2/2

S/181/62/004/005/004/055  
B102/B104

AUTHORS: Vekilov, Yu. Kh. and Piguzov, Yu. V.

TITLE: Internal friction in silver chloride at low temperatures

PERIODICAL: Fizika tverdogo tela, v. 4, no. 5, 1962, 1099 - 1102

TEXT: The internal friction and the shear modulus of deformed AgCl samples with and without irradiation were measured in a relaxator with inversion pendulum for the region  $-190 - +20^{\circ}\text{C}$ . The logarithmic decrement of low-amplitude free flexural vibrations was taken to be a measure of internal friction. The degree of predeformation amounted to  $\sim 99\%$ , and the frequency of vibrations was 1 cps. All measurements were made on heated samples, the rate of heating being  $30^{\circ}\text{C/hr}$ . The non-irradiated samples were studied first. These were then irradiated with ultra-violet rays for 10 to 50 min at the temperature of liquid nitrogen. The temperature dependences of internal friction ( $Q^{-1}$ ) and shear modulus ( $G \sim f^2$ ,  $f$  = frequency) were measured; the results are shown in the figure. The results can be explained by assuming that the ultra-violet radiation

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B102/B104

Internal friction in silver ...

produces point defects which are at first frozen but which on heating wander to the dislocations and cover them. The same is true of the vacancies occurring at 78°K. The two effects act in contrary directions. They explain the maximum at -25°C and the minimum at -15°C. The peaks at -125 and -65°C are related to relaxations of radiation defects. The most important English-language references are: R. G. Breckenridge. Imperfections in Nearly Perfect Crystals, N. Y., 1952; R. Wiley, J. Chem. Phys., 16, 959, 1948; 18, 913, 1950; R. S. Barnes a. Hancock. Phil. Mag., 3, 527, 1958.

ASSOCIATION: Moskovskiy institut stali (Moscow Steel Institute)

SUBMITTED: November 30, 1961

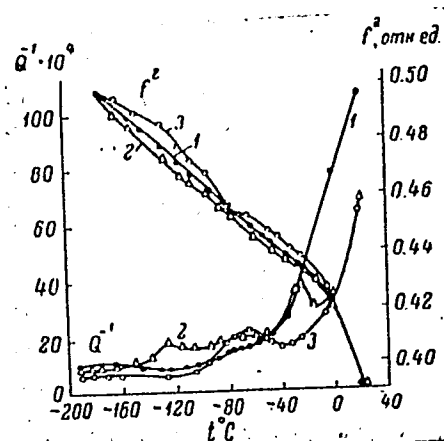
Card 2/3

Internal friction in silver ...

Fig. Temperature dependence of internal friction and shear modulus in silver chloride.

Legend: (1) before irradiation; (2) irradiated at  $-190^{\circ}\text{C}$ ; (3) after a second cooling of the sample irradiated at  $-190^{\circ}\text{C}$ .

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B102/B104



Card 3/3

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S/181/60/002/06/11/050  
B122/B063

AUTHORS: Shaskol'skaya, M. P., Vekilov, Yu. Kh.

TITLE: Effect of Ultraviolet and X-Rays Upon the Internal Friction  
of Silver Chloride

PERIODICAL: Fizika tverdogo tela, 1960, Vol. 2, No. 6, pp. 1107 - 1110

TEXT: The article under review describes the effect of ultraviolet and X-rays upon amplitude-independent internal friction at low frequencies (1 cps). The internal friction was determined by measuring the logarithmic decrement of damping of the torsional vibrations of AgCl filaments by means of a relaxator. The behavior of the shear modulus was determined from the square of the vibration frequencies ( $f^2$ ). The AgCl samples were first deformed (compressed) and another part of the samples was annealed. No satisfactory results, however, could be obtained with the latter (Table). The internal friction was reduced by irradiation, with ultraviolet and X-rays yielding the same action. The following dependence of the intensification

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Effect of Ultraviolet and X-Rays Upon the  
Internal Friction of Silver Chloride

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B122/B063

$\Delta Q^{-1}$  (or reduction of internal friction) on the exposure time could be established:  $\Delta Q^{-1} = \Delta Q_{\max}^{-1} e^{-\beta \tau}$ . Samples that had been compressed already before, were strengthened on irradiation according to the same law. The stabilization is explained by fixation of dislocations caused by radiation, the dislocations having been produced by deformation. The internal friction is thus reduced by the fixation of dislocations.  $\beta$  in the above formula denotes the number of nodes fixed per unit of time during exposure. The limit of internal friction was found to be independent of the type and intensity of irradiation and of the number of the resultant vacancies. The authors finally thank Professor B. N. Finkel'shteyn, Doctor of Physical and Mathematical Sciences, for his interest and for his discussions of the results, as well as V. R. Regel' and V. M. Stepanov for their aid in drawing the expansion curves. There are 3 figures, 1 table, and 11 references: 5 Soviet, 1 German, 4 American.

ASSOCIATION: Kafedra fiziki Moskovskogo instituta stali (Chair of Physics  
of the Moscow Steel Institute)

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